Region 1 FY 2012 Invasive Species Control Program Proposal

Refuge/Complex name: **Hanford Reach National Monument**

Project title: **Snively Basin Rye Field Rehabilitation**

Project description:

Target Invasive Species:	Cereal rye (*Secale cereale*; a Class C noxious weed in WA)
Infested acres:	521 acres
Treatment acres:	521 acres
Utilized IPM measures:	Chemical (Wipe Application) Mechanical (Mowing) Mechanical (Prescribed Fire) Cultural (Competition Seeding) Prevention (Spot Treatment, Equipment/Access BMP's)

The Snively Basin area of the Arid Lands Ecology Reserve (ALE) within the Hanford Reach National Monument (Monument) was historically used to farm cereal rye, among other dryland grains. The rye had seeded itself out and maintained a near monoculture within the old fields since farming ceased in 1944. It was largely confined to these fields by the relative health of the surrounding native shrub-steppe habitats until catastrophic wildfires in 2000 and 2007. Following the 2000 fire, the rye began to expand and take over surrounding habitats. By 2008 it had expanded to infest over 530 acres. Following the 2007 wildfire, USFWS began efforts to eradicate cereal rye from the ALE as part of a Burned Area Emergency Response (BAER) plan (3 year funding). The treatment prescription developed for this project relied on multi-year integration (7+ years) of chemical, mechanical (mowing), and cultural (prescribed fire, competition seeding) treatments, following a traditional successional rehabilitation construct (*i.e.*, "reset" the site, address the degrading component(s), and apply enough input(s) to put the ecological successional stages on a path to a desired outcome or climax community). Since project initiation in February 2008, the Refuge has made numerous chemical applications (both aerial and wipe applications) in an effort to exhaust the cereal rye seed bank. The Refuge has also conducted a partial mosaic burn and drill seeded the main fields with a customized native seed mix. To continue with the treatment prescription and ensure long-term success of investments made to date an additional chemical (wipe) application needs to be made, followed by mowing, a prescribed burn, and supplemental over-seed of a heavier infestation area where the initial seeding had reduced success due to an incomplete burn. Monitoring and spot treatment of other invasives as necessary will also need to be conducted. Weed transport prevention protocols are in place across the Mid-Columbia River NWR Complex, which will limit potential introduction of other invasive species into the project area.

What is potential for eradication of the invasive species?

This project addresses the eradication of cereal rye by preventing seed production within the entire infestation area, thereby eliminating the invasive seed bank through attrition. Within the Columbia Basin, cereal rye seed typically remains viable in the seed bank for 3-4 years; 2012 will be the third year with no seed production and the fifth year for seed bank reduction (some seed production occurred in 2008 and 2009, though at a greatly reduced rate). Invasion by another invasive is precluded through monitoring and spot treatment, through the introduction and establishment of native species through seeding, and through enforcement of weed transport prevention protocols.

Comment [BFW1]: DOE is interesting in partnering with monitoring and analysis & very interesting in learning about the restoration techniques FWS is using and applying it to Central Hanford. Some lands in Central Hanford could potentially be transferred to the Service in the future.

Comment [BFW2]: The ISCP proposal format we received did not include a budget section so we were unsure how much information you wanted. The attached Excel workbook gives a partial cost breakdown for the two projects, with worksheets splitting the two projects. This workbook highlights the anticipated costs to be covered under the ISCP award. Costs are based on real-world estimates from past projects and/or from contractors. The cells include the calculation formulas and standard multipliers (e.g., contracting costs) so highlighting individual cells will give you an idea of where information comes from and/or how it's calculated.

We have already committed 4 years and hundreds of thousands of dollars (split between BAER and station funds) to the Snively Basin project and our goal (eradication of cereal rye) is within sight (95-99% eradication within 2 years (including 2012), 100% within 3-4 years). Missing even one year of treatment sets the entire project back to near square one, given the reproduction potential and half life of rye seed in the seed bank (3-4 years). We have done minimal work on Hwy 24 Homestead area to date. However, it has rated as among the top priority projects for hazardous fuels reduction under the Project Prioritization and the Hazardous Fuels Prioritization and Allocation Systems and as such has been partially funded through that program. However, the hazardous fuels program can not by policy/practice be used to fund habitat work so the necessary follow-up work was not funded (i.e., full invasives control, native seeding, full monitoring). Failure to do this additional work would be in direct violation of policy (most notably BIDEH) and potentially of law (National Wildlife Refuge System Improvement Act, ...

Comment [BFW3]: 1) Are both projects contingent on additional funding that you'll need to apply for again next year from ISCP? Will they be a failure if you are not awarded funding in FY2013?
You did indeed speak with Heidi about the Hwy 24 Homestead project. The Hwy 24 Homestead project will likely require additional funding in Years 2 and 3 beyond base funding, though at a significantly lower level than is required this year (calculated total for 2013: $18,048, for 2014: $15,647; however these totals also include some costs that would come under base funding, such as salaries for extant employees). Whether this would be through a grant/appropriation/what have you, such as ISCP, or through another funding mechanism, remains to be seen.

The Snively Basin project may or may not require outside funding next year (and only next year). This is entirely dependent how well th ...

Does the project support achieving the refuge purpose?
One of the primary purposes of the Monument as stated in Presidential Proclamation 7319 ("Establishment of the Hanford Reach National Monument") and in the Final Comprehensive Conservation Plan is to protect and restore shrub-steppe ecosystems. The cereal rye is not native and causes severe degradation of shrub-steppe ecosystems. Eradication of cereal rye and establishment of self-functioning native ecosystems by definition supports the primary purpose of the Monument. Additionally, this project addresses identified 'Part G' obligations within the BAER plan (*i.e.*, post-rehabilitation recommendations beyond the three year time-frame of the BAER funding cycle to ensure the effectiveness of initial investments).

Does the project support biological integrity?
By eradicating the primary (invasive) degrading component of the project area, and simultaneously re-introducing a functioning native successional community, the biological integrity of the area can be re-established. Further, the surrounding native habitats will remain uninfested and will be able to continue to naturally recover from the catastrophic wildfires of 2000 and 2007.

Will the project involve support from partners?
Hanford Fire and various Benton County fire districts would be involved with the prescribed fire portion of the project. Friends of the Mid-Columbia River Refuges, as well as other Refuge volunteers, would be involved with the monitoring. The Yakama Nation, the Confederated Tribes of the Umatilla, and the Nez Perce Tribe have been generally supportive of the project to date and will continue to be consulted through the Cultural Resource Clearance process (most of the ALE is considered a "Traditional Cultural Property" under the National Historic Preservation Act, so even general tribal support is important).

What monitoring will be used to evaluate the project?
The cereal rye infestation has been mapped over time from multiple aerial imagery datasets, as well as with GPS-mapping and ground-truthing. No known true 'Time 0' sampling data exists for vegetation within the rye fields as the initial disturbance (farming) began in the late 1800's and the cereal rye eradication project was originally initiated in response to a catastrophic wildfire event. However, multiple monitoring plots were established within the Snively Basin prior to initiation of eradication treatments (*i.e.*, 'Time1' data was captured). Wildfire-centric 'Time 0' data does exist in the relatively undisturbed areas adjacent to the project area, and simultaneously provides a good reference (target) condition and control data. A long-term data set (*i.e.*, 'Time 1' pre-dates the 2000 wildfire) exists for breeding birds within the Basin. Small mammal sampling was conducted at known sites within the Basin by a Department of Energy contractor prior to the 2000 fire; data and/or summary reports are available for this sampling. Additionally, multiple photopoints have been established within and adjacent to the project area. Post-treatment monitoring will include revisiting the vegetation monitoring transects, continuing the breeding bird monitoring, resampling the small mammal populations, revisiting the photopoints, and GPS/GIS mapping of treatments and remaining infestations.

Budget: Total – $42,500 (*to chemically treat (wipe application) cereal rye, monitor and spot treat other invasives as necessary, mow standing detritus, perform a prescribed burn, and purchase and apply native seed*)

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